

Remarks

Claims 1-10 and 12-20 are pending.

Claim 10 is original.

Claims 1-9 and 12-20 are as previously presented.

Rejections

Claims 1, 2 and 8 are rejected under 35 USC 103(a) over Veits, et. Al., Russian Journal of General Chemistry (2000), 70(8), 1237-1239.

Applicants respectfully traverse the rejections.

Applicants wish to clarify an important feature of the instant invention. In claim 1, step (1), an organic phosphorous halide is reacted with an alkalai metal. In using the term "alkalai metal", Applicants are referring to a simple metal and not a metal compound such as a metal salt or organometallic compound. Applicants point to the Examples wherein lumps of sodium are employed.

For further support of this intended meaning Applicants respectfully point to page 12 of the specification and contrast lines 7 and 9, which describes the use of 4-6 or 2-3 atom equivalents of alkalai metal in solid or molten form, with line 12 which refers to metal hydroxides or alkoxylates. That is to say, that when referring to a metal compound or metal salt, such language is used.

Veits uses either an inorganic metal salt, that is the powerful reducing hydride LiAlH₄, or an organo-metallic compound, the strong base BuLi. Such compounds are not used in the instant metallation step. Applicants respectfully submit that Veits discloses the use of "metal compounds", but not the use of a "metal" as in the instant invention.

Further, following the phosphorous chloride with LiAlH₄, Veits reacts the resulting phosphorous hydride with BuLi and a silyl chloride prior to reaction with an acyl chloride. As a result, Veits produces a phosphorous compound substituted by Alkyl, Acyl and Hydrogen.

In contrast, the instant process follows reaction with a metal in the presence of a proton source with acylation producing a phosphorous compound substituted by Alkyl and Acyl but not Hydrogen.

Applicants respectfully submit that Veits significantly differs from the instant process in at least three essential ways, 1) the use of a metal salt instead of a metal in the first step, 2) subsequent reaction with an additional metal compound and a silyl chloride in the second step, and 3) the product of Veits is a phosphorous hydride and not the compound of the instant process.

Applicants therefore respectfully disagree with the conclusion of the Action on page 3 which states that Veits teaches essentially the same reactions as those claimed. Applicants also believe that in light of the discussion above clarifying the meaning of the term 'metal', the claim language is limiting to reagents that are simple metals, e.g., lumps of sodium, and not metal containing compounds as found in Veits.

Applicants respectfully submit that there is no basis for a 35 USC 103(a) rejection of claims 1, 2 and 8 over Veits and kindly ask that the rejections be withdrawn.

Claims 1-8 are provisionally rejected for non-statutory obviousness-type double patenting over US Pat Appl No 11/795059. Claims 1-19 are provisionally rejected for non-statutory obviousness-type double patenting over US Pat Appl No 11/667780.

Applicants respectfully traverse the rejections.

The Action states on page 4 that Appl No 11/795059, 11/667780 and the instant invention all recite the steps of reacting phosphorous halides with acid halides. Applicants respectfully disagree with this assessment in that the phosphorous halide is converted into different species in each process which species is then reacted with an acyl halide. While the three applications all describe the preparation of organic phosphorous compounds, the steps used in each process are vastly different and it is these different steps that in each case define the invention.

The first step of the instant process, as described above, reacts a metal with an organic phosphorous chloride. The metal is a reagent and not a catalyst, e.g., page 12 lines 6-10 of the specification and the Examples.

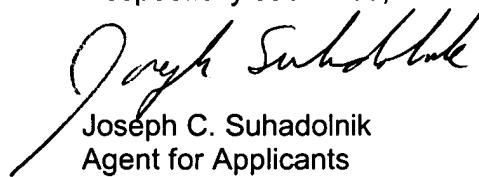
US Pat Appl No 11/795059 starts instead with hydrogenation of an organo phosphorous chloride. Applicants respectfully aver that the catalytic hydrogenation of 11/795059 is well known to be different chemistry entirely from the metallation of the instant invention.

US Pat Appl No 11/667780 starts with elemental phosphorous or the inorganic PCl₃, either of which have different properties and require different handling than the instant organic phosphorous starting compounds. Also, the metallation of elemental phosphorous or PCl₃ in '059 is carried out under different conditions. In the instant case, metalation is carried out in the presence of a hydrogen source, such as an alcohol, but in '059 the optional reaction of the metallated species with a hydrogen source is carried out in a subsequent step. Applicants respectfully aver that the two processes differ in at least the following ways, the material which undergoes metalation is different, the product obtained from metalation is different, and the material which is treated with acyl chloride is different.

Given the above cited differences, Applicants respectfully submit that the steps found in the processes of copending US Application No 11/795059 and 11/667780 are significantly different than those of the instant invention. Applicants therefore believe that there is no case for non-obviousness double patenting rejections of the instant claims over copending US Application No 11/795059 and 11/667780 and kindly ask that the rejections be withdrawn.

Applicants respectfully submit that all rejections are addressed and are overcome and kindly ask that they be withdrawn and that the claims 1-10 and 12-20 be found allowable. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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